



Thermacon Tank Insulation Systems
by Vertarib Inc.
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Phil:

Thank you for the opportunity to work with you on the tank in Shaktoolik, AK. I have put together pricing for material and installation – with multiple options to handle various possibilities as follows:

Scope of Work

1 Tank – 66' diameter x 32' height

Option A - Provide “Thermacon” horizontal Aluminum Outer Panel (1” panel) to be placed over existing panel system – Shell and/or Roof; Existing insulation will be repaired by reinsulating areas with holes and/or damage, tightening bands and then reinstalling outer Thermacon panel over existing metal skin.

Option B – Replacement of Current System with new panel system with total 5” insulation.

We propose the Thermacon Tank Insulation System that will consist of:

Tank Sidewall

- **Option A** -The insulation system shall be comprised of an outer panel, precurved to fit the tank shell curvature, composed of 48” x 96” x .032” aluminum sheathing laminated to one (1”) inch thick foil faced (both sides) isocyanurate foam.
- **Option B** – In addition to the 1” laminated outer panel in Option A – Existing system will be stripped and two inner layers consisting of a total of four (4”) inch 25psi density polystyrene foam.

- **Fastening System and Weather Sealing:** An effective weather tight system shall be provided. The weather tight system shall have a shop-installed, extruded aluminum vertical weather seal, and neoprene gasket insert on the end of each panel. The extrusion shall function as a weather sealed overlap; the slotted ends and factory punched slots will provide location and prevent vertical movement of the horizontal banding system.
- An aluminum band shall be provided for sealing the top edge of all panels. The band shall be of sufficient width to insure a 1-inch minimum lap over the external sheathing.
- Bandsion Clamping System consisting of external Bands and clamps shall be provided for attaching the panels to the tank. The banding and clamping system shall be designed to withstand wind pressures per the International Building Code (latest MOA adopted and amended edition) requirement and shall allow for extremes of thermal expansion and contraction of the banding.
- All manways, nozzles, brackets, vents, and stairways will have the panels cut tight against them and will be sealed with polyurethane caulk or equal.

Tank Roof

- The tank roof insulation shall be of similar construction to sidewall panels composed of:
 - **Option A** - one (1") inch thick foil-faced (both sides) isocyanurate foam insulation laminated to .032" thick 3105H25 alloy aluminum sheathing.
 - **Option B** - In addition to the 1" laminated outer panel in Option A – Existing system will be stripped and two inner layers consisting of a total of four (4") inches 40 psi density polystyrene foam.
- The panels shall be secured to the internal cables with stainless steel clips incorporated into the panel seam and tied to each crossing cable.
- Joints between panels short edge shall be filled with foam filler pieces and coped with riveted z-coping and .032" aluminum flashing.
- All penetrations to the metal sheathing will have turned up edges to prevent water entry and to provide for thermal expansion. These edges will be caulk sealed and counter flashed.

<u>Price</u>	<u>Shell</u>	<u>Roof</u>	<u>Total</u>
<u>Option A</u>			
Insulation Materials	\$ 46,100	\$ 25,745	\$ 71,845
Installation	\$ 42,450	\$ 17,200	\$ 59,650
	<u>\$ 88,550</u>	<u>\$ 42,945</u>	<u>\$ 131,495</u>
<u>Option B</u>			
Insulation Materials	\$ 67,605	\$ 42,830	\$ 110,435
Installation, includes stripping	<u>\$ 51,275</u>	<u>\$ 24,050</u>	<u>\$ 75,325</u>
Total	<u>\$118,880</u>	<u>\$ 66,880</u>	<u>\$ 185,760</u>

Terms

- Allow for 2-3 weeks for submittal drawings (if required).
 - Production will commence 3 weeks after receipt of drawing approval, purchase order and initial payment (35% of total price).
 - Product shipment within 3-4 weeks.
 - Freight to deliver to Seattle, WA. Is included (Crated).
 - 1" Panels – 6 crates – approx. size 50"w x 100"l x 84"h – 1,000 lbs each.
 - Inner Layers – 12 crates - approx. size – 8'w x 8'l x 8'h – 500 lbs per skid. (can be shipped from Anchorage at no extra charge)
- Freight to site can be arranged by Vertarib at actual freight cost plus 15%.
- Price does not include any duties, permits or sales and use taxes.
 - Installation is included, VSW to provide lift and subsistence for two men. The cost of stripping existing insulation off tank is included in installation price (cost of disposal of existing insulation not included).

Thank you for giving Vertarib the opportunity to participate in solving your insulation needs. If you have any questions feel free to contact me at your convenience.

Regards,

Thermacon Insulation Systems
by **Vertarib**

Alan Dinow

Alan Dinow
Vice President